

WHAT IS CLAIMED IS:

1. A froth flotation process for beneficiating an ore, comprising:
 - forming a slurry comprising water and particles of an ore, the ore containing sulfide minerals;
 - intermixing said slurry with effective amounts of a frothing agent and a collector to form a froth containing beneficiated sulfide minerals, the collector comprising N-butoxycarbonyl-O-butylthionocarbamate; and
 - collecting said beneficiated sulfide minerals.
2. The process of Claim 1 in which said collector is intermixed with said slurry in an amount in the range of about 0.005 to about 5 lbs per ton of ore in said slurry.
3. The process of Claim 1 in which said collector is intermixed with said slurry in an amount in the range of about 0.1 to about 2 lbs per ton of ore in said slurry.
4. The process of Claim 1 in which said slurry has a pH in the range of about 6 to about 12.
5. The process of Claim 1 in which said slurry has a pH in the range of about 9 to about 11.5.
6. The process of Claim 1 in which said N-butoxycarbonyl-O-butylthionocarbamate is selected from the group consisting of N-isobutoxycarbonyl-O-isobutylthionocarbamate and N-butoxycarbonyl-O-isobutylthionocarbamate.
7. The process of Claim 1 in which said ore comprises a metal selected from the group consisting of copper, lead and zinc.